

**CPC****COOPERATIVE PATENT CLASSIFICATION****G05G**

**CONTROL DEVICES OR SYSTEMS INsofar AS CHARACTERISED BY MECHANICAL FEATURES ONLY** ("Bowden" or like mechanisms [F16C 1/10](#); gearings or mechanisms not peculiar to this purpose [F16H](#); speed changing or reversing mechanisms for gearings conveying rotary motion [F16H 59/00](#) to [F16H 63/00](#))

**NOTE**

This subclass covers :

- members of general applicability for mechanical control;
- mechanical systems for moving members to one or more definite settings.

Systems peculiar to the control of particular machines or apparatus provided for in a single other class are classified in the relevant class for such machines or apparatus, for example:

[A61G 13/02](#) Controls for adjusting operating tables  
[A61G 15/02](#) Controls for adjusting operating chairs  
 B25J Manipulators, e.g. controls therefor  
[B60K 26/00](#) Arrangement or mounting of propulsion-unit control devices in vehicles  
[B60T 7/00](#) Vehicle brake-action initiating means  
[B62D 33/073](#) Adaptations of control devices for movable vehicle cabs  
[B62K 21/00](#) Cycle-steering devices  
[B62K 23/00](#) Rider-operated controls specially adapted for cycles  
[B62L 3/00](#) Brake-actuating mechanisms specially adapted for cycles  
[B63H 25/02](#) Marine steering initiating means  
[B66B 1/00](#) Controls for elevators  
[B66C 13/18](#) Control systems or devices for cranes  
[B66C 13/56](#) Arrangements of handles or pedals for crane operation  
[E02F 9/20](#) Control devices for dredging or soil shifting machines  
[F16C 3/28](#) Adjustable cranks or eccentrics  
[F16D 43/00](#) Automatic clutches  
 { [F16H 59/00](#) to [F16H 63/00](#) Speed changing or reversing mechanisms for gearings conveying rotary motion}  
[F16K 31/00](#), [F16K 33/00](#) Controls for valves  
[F16P 3/00](#) Safety devices acting in conjunction with the control or operation of a machine  
[F16P 7/02](#) Stopping machines on occurrence of dangerous conditions therein  
[G02B 21/32](#) Micromanipulators structurally combined with microscopes  
[G04B 1/00](#) to [G04B 18/00](#) Driving mechanisms in clocks or watches  
 G06C Digital computers in which all the computation is effected mechanically  
[G06F 3/02](#) Manual computer input arrangements  
[G06K 11/00](#) Converting a pattern of mechanical parameters into electric signals  
[G21C 7/08](#) Displacement of solid control elements in nuclear reactors  
 H01H Mechanisms for operating switch contacts  
[H03J 1/00](#) Mechanical control of resonant circuits.

- G05G 1/00**      **Controlling members, e.g. knobs or handles; Assemblies or arrangements thereof; Indicating position of controlling members** ({ means for preventing, limiting or returning the movements of parts of a control mechanism [G05G 5/00](#); providing feel, e.g. means to create a counterforce [G05G 5/03](#); specially adapted for programme control [G05G 21/00](#); vibration damping [G05G 25/02](#);} joysticks [G05G 9/04](#); steering wheels for motor vehicles B62D)
- NOTE**
- Within this main group the first place priority rule is applied, i.e. at each hierarchical level classification is made in the first appropriate place
- [G05G 1/01](#)      . Arrangements of two or more controlling members with respect to one another (double foot control, e.g. for instruction vehicles [G05G 1/34](#); mounting units comprising an assembly with two or more pedals [G05G 1/36](#))
- [G05G 1/015](#)      . Arrangements for indicating the position of a controlling member (means for continuously detecting pedal position [G05G 1/38](#); means for detecting position through tactile feedback [G05G 5/03](#))
- [G05G 1/02](#)      . Controlling members for hand actuation by linear movement, e.g. push buttons
- [G05G 1/025](#)      .. {actuated by sliding movement}
- [G05G 1/04](#)      . Controlling members for hand actuation by pivoting movement, e.g. levers
- [G05G 1/06](#)      .. Details of their grip parts {([G05G 1/10](#) takes precedence)}
- [G05G 1/08](#)      . Controlling members for hand actuation by rotary movement, e.g. hand wheels
- [G05G 1/082](#)      .. {having safety devices, e.g. means for disengaging the control member from the actuated member}
- [G05G 1/085](#)      .. {Crank handles ([G05G 1/082](#) takes precedence)}
- [G05G 1/087](#)      .. {retractable; Flush control knobs}
- [G05G 1/10](#)      .. Details, e.g. of discs, knobs, wheels or handles {([G05G 1/085](#) takes precedence)}
- [G05G 1/105](#)      ... {comprising arrangements for illumination}
- [G05G 1/12](#)      ... Means for securing the members on rotatable spindles or the like
- [G05G 1/30](#)      . Controlling members actuated by foot
- [G05G 1/305](#)      .. {Compound pedal co-operating with two or more controlled members}
- [G05G 1/32](#)      .. with means to prevent injury
- [G05G 1/323](#)      ... means disconnecting the connection between pedal and controlled member, e.g. by breaking or bending the connecting rod
- [G05G 1/327](#)      ... means disconnecting the pedal from its hinge or support, e.g. by breaking or bending the support
- [G05G 1/34](#)      .. Double foot controls, e.g. for instruction vehicles
- [G05G 1/36](#)      .. Mounting units comprising an assembly of two or more pedals, e.g. for facilitating mounting
- [G05G 1/38](#)      .. comprising means to continuously detect pedal position
- [G05G 1/40](#)      .. adjustable
- [G05G 1/405](#)      ... infinitely adjustable

- G05G 1/42 . . non-pivoting, e.g. sliding
- G05G 1/44 . . pivoting
- G05G 1/445 . . . about a central fulcrum
- G05G 1/46 . . Means, e.g. links, for connecting the pedal to the controlled unit
- G05G 1/48 . . Non-slip pedal treads; Pedal extensions or attachments characterised by mechanical features only
- G05G 1/483 . . . Non-slip treads; Pedal extensions or attachments characterised by mechanical features only
- G05G 1/487 . . . Pedal extensions
- G05G 1/50 . . Manufacturing of pedals; Pedals characterised by the material used
- G05G 1/503 . . . { Controlling members for hand-actuation}
- G05G 1/506 . . . { Controlling members for foot-actuation}
  
- G05G 1/52 . Controlling members specially adapted for actuation by other parts of the human body than hand or foot
  
- G05G 1/54 . Controlling members specially adapted for actuation by auxiliary operating members or extensions; Operating members or extensions therefor ([pedal extensions](#))
- G05G 1/56 . . Controlling members specially adapted for actuation by keys, screwdrivers or like tools
  
- G05G 1/58 . Rests or guides for relevant parts of the operator's body
- G05G 1/60 . . Foot rests or foot guides
- G05G 1/62 . . Arm rests
  
- G05G 3/00** **Controlled members; Assemblies or arrangements thereof** ([interlocking of controlled members G05G 5/08](#))
  
- G05G 5/00** **Means for preventing, limiting or returning the movements of parts of a control mechanism, e.g. locking controlling member** ([G05G 17/00 takes precedence](#))
  
- G05G 5/005 . {for preventing unintentional use of a control mechanism ([G05G 5/28 takes precedence](#))}
- G05G 5/02 . Means preventing undesired movements of a controlling member which can be moved in two or more separate steps or ways, e.g. restricting to a stepwise movement or to a particular sequence of movements ([G05G 5/28 takes precedence](#))
- G05G 5/03 . Means for enhancing the operator`s awareness of arrival of the controlling member at a command or datum position; Providing feel, e.g. means for creating a counterforce ([arrangements for indicating the position of the controlling member G05G 1/015](#))
- G05G 5/04 . Stops for limiting movement of members e.g. adjustable stop ([G05G 5/03](#), [G05G 5/05](#), [G05G 5/28 take precedence](#))
- G05G 5/05 . Means for returning or tending to return controlling members to an inoperative or neutral position, e.g. by providing return springs or resilient end-stops ([G05G 5/28 takes precedence](#))

- G05G 5/06 . for holding members in one or a limited number of definite positions only  
([G05G 5/005](#), [G05G 5/03](#), [G05G 5/05](#), [G05G 5/28](#) take precedence)
- G05G 5/065 .. {using a spring-loaded ball}
- G05G 5/08 .. Interlocking of members, e.g. locking member in a particular position before or during the movement of another member
  
- G05G 5/12 . for holding members in an indefinite number of positions, e.g. by a toothed quadrant  
([G05G 5/28](#) takes precedence)
- G05G 5/14 .. by locking a member with respect to a fixed quadrant, rod, or the like
- G05G 5/16 ... by friction
- G05G 5/18 ... by positive interengagement, e.g. by a pawl
- G05G 5/20 .. by locking a quadrant, rod, or the like carried by the member
- G05G 5/22 ... by friction
- G05G 5/24 ... by positive interengagement, e.g. by a pawl
- G05G 5/26 .. by other means than a quadrant, rod, or the like
  
- G05G 5/28 . for preventing unauthorised access to the controlling member or its movement to a command position
  
- G05G 7/00** **Manually-actuated control mechanisms provided with one single controlling member co-operating with one single controlled member; Details thereof**  
(controlling members [G05G 1/00](#))
  
- G05G 7/02 . Characterised by special provisions for conveying or converting motion, or for acting at a distance
- G05G 7/04 .. altering the ratio of motion or force between controlling member and controlled member as a function of the position of the controlling member
- G05G 7/06 .. in which repeated movement of the controlling member produces increments of movement of the controlled member ([G05G 7/08](#) takes precedence)
- G05G 7/08 .. in which repeated movement of the controlling member moves the controlling member through a cycle of distinct positions
- G05G 7/10 .. specially adapted for remote control ([G05G 7/04](#) to [G05G 7/08](#) take precedence)
  
- G05G 7/12 . specially adapted for actuating a member on a system in motion with respect to the controlling member, e.g. on a rotating shaft
  
- G05G 7/14 . characterised by means for delaying initiation of, or making more gradual throughout, the movement of the controlled member in response to a given input from the controlling member, e.g. by providing lost motion in the command train
  
- G05G 7/16 . Special provisions for reducing the effect of slight relative movement between supports of the mechanism e.g. resulting from resilient mounting of a controlled mechanism
  
- G05G 9/00** **Manually-actuated control mechanisms provided with one single controlling member co-operating with two or more controlled members, e.g. selectively, simultaneously**
  
- G05G 9/02 . the controlling member being movable in different independent ways, movement in

- each individual way actuating one controlled member only
- G05G 9/04 . . . in which movement in two or more ways can occur simultaneously
  - G05G 9/047 . . . . the controlling member being movable by hand about orthogonal axes, e.g. joysticks {(for switches [H01H 25/04](#))}
  - G05G 9/04737 . . . . . {with six degrees of freedom}
  - G05G 9/04785 . . . . . {the controlling member being the operating part of a switch arrangement}
  - G05G 9/04788 . . . . . {comprising additional control elements}
  - G05G 9/04792 . . . . . {for rotary control around the axis of the controlling member}
  - G05G 9/04796 . . . . . {for rectilinear control along the axis of the controlling member}
  - G05G 9/053 . . . . the controlling member comprising a ball {(graph-reading using a tracing ball or mouse [G06K 11/18](#))}
- G05G 9/06 . the controlled members being actuated successively by repeated movement of the controlling member
  - G05G 9/08 . the controlled members being actuated successively by progressive movement of the controlling member {(Single lever throttle and clutch control for marine engines [B63H 21/22B](#))}
  - G05G 9/085 . . {the controlling member acting on a set of cams or slot cams}
  - G05G 9/10 . with preselection and subsequent movement of each controlled member by movement of the controlling member in two different ways, e.g. guided by a shift gate
- G05G 11/00 Manually-actuated control mechanisms provided with two or more controlling members co-operating with one single controlled member**
- G05G 13/00 Manually-actuated control mechanisms provided with two or more controlling members and also two or more controlled members ([interlocking G05G 5/08](#))**
- G05G 13/02 . with separate controlling members for preselection and shifting of controlled members
- G05G 15/00 Mechanical devices for initiating a movement automatically due to a specific cause**
- G05G 15/002 . {due to an abnormal functioning of the controlled apparatus (if speed is abnormal [G05G 15/06](#))}
  - G05G 15/005 . {due to a dangerous situation for the operator}
  - G05G 15/007 . {due to an exerted pressure}
  - G05G 15/02 . due to alteration of the sense of movement of a member
  - G05G 15/04 . due to distance or angle travelled by a member
  - G05G 15/06 . due to the speed of rotation or of bodily movement of a member, e.g. passing an upper or lower limit thereof ([speedometers G01P](#))
  - G05G 15/08 . due to the load or torque on a member, e.g. if exceeding a predetermined value

thereof

- G05G 17/00**      **Mechanical devices for moving a member after being released; Trip or release mechanisms characterised thereby**
- G05G 19/00**      **Servo-mechanisms with follow-up action, e.g. occurring in steps**
- G05G 21/00**      **Mechanical apparatus for control of a series of operations, i.e. programme control, e.g. involving a set of cams ([G05G 5/02](#) takes precedence)**
- G05G 23/00**      **Means for ensuring the correct positioning of parts of control mechanisms, e.g. for taking-up play**
- G05G 23/02      . self-adjusting
- G05G 25/00**      **Other details or appurtenances of control mechanisms, e.g. supporting intermediate members elastically**
- G05G 25/02      . Inhibiting the generation or transmission of noise **{{(suppression of noise or vibrations in selector apparatus for gearings [F16H 59/0208](#))}}**
- G05G 25/04      . Sealing against entry of dust, weather or the like **{{(in selector apparatus for gearings, [F16H 59/0213](#))}}**
- G05G 2009/00**      **Manually-actuated control mechanisms provided with one single controlling member co-operating with two or more controlled members, e.g. selectively, simultaneously**
- G05G 2009/02      . the controlling member being movable in different independent ways, movement in each individual way actuating one controlled member only
- G05G 2009/04      . . . in which movement in two or more ways can occur simultaneously
- G05G 2009/047      . . . the controlling member being movable by hand about orthogonal axes, e.g. joysticks **{{(for switches [H01H 25/04](#))}}**
- G05G 2009/04703**      . . . . Mounting of controlling member
- G05G 2009/04707**      . . . . . with ball joint
- G05G 2009/04711**      . . . . . with substantially hemispherical bearing part forced into engagement, e.g. by a spring
- G05G 2009/04714**      . . . . . with orthogonal axes
- G05G 2009/04718**      . . . . . with cardan or gimbal type joint
- G05G 2009/04722**      . . . . . elastic, e.g. flexible shaft
- G05G 2009/04725**      . . . . . with coil spring
- G05G 2009/04729**      . . . . . melastomeric
- G05G 2009/04733**      . . . . . with a joint having a nutating disc, e.g. forced by a spring

G05G 2009/0474	....	characterised by means converting mechanical movement into electric signals
G05G 2009/04744	.....	Switches
G05G 2009/04748	.....	Position sensor for rotary movement, e.g. potentiometer
G05G 2009/04751	.....	Position sensor for linear movement
G05G 2009/04755	.....	Magnetic sensor, e.g. hall generator, pick-up coil
G05G 2009/04759	.....	Light-sensitive detector, e.g. photoelectric
G05G 2009/04762	.....	Force transducer, e.g. strain gauge
G05G 2009/04766	....	providing feel, e.g. indexing means, means to create counterforce
G05G 2009/0477	.....	holding the member in a number of definite positions
G05G 2009/04774	....	with additional switches or sensors on the handle
G05G 2009/04777	....	with additional push or pull action on the handle
G05G 2009/04781	....	with additional rotation of the controlling member

**NOTE**

Provisional indexing codes related to scheme of trilateral project T021

**G05G 2505/00**      **Means for preventing, limiting or returning the movements of parts of a control mechanism, e.g. locking controlling member**

**G05G 2700/00**      **Control mechanisms or elements therefor applying a mechanical movement**

G05G 2700/02	.	Means for regulating or adjusting control mechanisms, e.g. devices for automatic adjustment
G05G 2700/04	.	Control mechanisms limiting amplitude or adjusting datum position
G05G 2700/06	..	Control mechanisms for holding members in a number of positions comprising a device to limit the control range
G05G 2700/08	..	Control mechanisms for locking members in one or more positions
G05G 2700/10	..	Control mechanisms for locking or at least for blocking a member in one position out of a number of several positions
G05G 2700/12	.	Control mechanisms with one controlling member and one controlled member
G05G 2700/14	..	with one elastic element as essential part, e.g. elastic components as a part of an actuating mechanism
G05G 2700/16	..	Mechanisms for conveying motion or signals for or in relation with control mechanisms
G05G 2700/18	..	Systems wherein the control element may be placed in two or more positions
G05G 2700/20	.	Control mechanisms not otherwise provided for
G05G 2700/22	.	Mechanisms linking plurality of controlling or controlled members

- G05G 2700/24 . . Locking controlled members of selectively controlled mechanisms
- G05G 2700/26 . . with a control member moving selectively or simultaneously the controlled members
- G05G 2700/28 . . . with a control member that is moved for preselection in another direction than for final actuating
- G05G 2700/30 . . . without preselection or differentiation between selection and actuating, e.g. control members with a fix control sequence, after a determined advance cycle, in which the control device comprises cams actuating separately the controlled members
- G05G 2700/32 . . with plurality of control members, e.g. preselection and actuating members actuating several controlled members